

WHAT IS CLAIMED IS:

1. A manufacturing method of a high resistivity silicon single crystal, wherein in a process where silicon raw material is molten to manufacture a high resistivity silicon single crystal having a resistivity in the range of from 100 to 2000  $\Omega$  cm with a CZ method, an impurity concentration in said silicon raw material is controlled in the range of from - 5 to 50 ppta in terms of (a donor concentration - an acceptor concentration).

2. The manufacturing method of a high resistivity silicon single crystal according to claim 1, wherein said silicon raw material is poly-silicon produced with a Siemens method using trichlorosilane as a raw material, and said poly-silicon to fall within the control range of said impurity concentration is selectively used.

3. The manufacturing method of a high resistivity silicon single crystal according to claim 1, wherein said silicon raw material is poly-silicon produced with a Siemens method using monosilane as raw material.

4. The manufacturing method of a high resistivity silicon single crystal according to claim 1, wherein said silicon raw material is a silicon crystal manufactured with a CZ method or a MCZ method from poly-silicon raw material.

5. A manufacturing method of a high resistivity silicon single crystal, wherein in a process where silicon raw material

is molten to manufacture a high resistivity silicon single crystal having a resistivity in the range of from 100 to 2000  $\Omega \text{ cm}$  with a MCZ method, an impurity concentration in said silicon raw material is controlled in the range of from - 25 to 20 ppt a in terms of (a donor concentration - an acceptor concentration) .

6. The manufacturing method of a high resistivity silicon single crystal according to claim 5, wherein said silicon raw material is poly-silicon produced with a Siemens method using trichlorosilane as a raw material, and said poly-silicon to fall within the control range of said impurity concentration is selectively used.

7. The manufacturing method of a high resistivity silicon single crystal according to claim 5, wherein said silicon raw material is poly-silicon produced with a Siemens method using monosilane as raw material.

8. The manufacturing method of a high resistivity silicon single crystal according to claim 5, wherein said silicon raw material is a silicon crystal manufactured with a CZ method or said MCZ method from poly-silicon raw material.